WESTERN FARMER & GARDENER.

"THE PROFIT OF THE EARTH IS FOR ALL; THE KING HIMSELF IS SERVED BY THE FIELD."—*Eccles* 5-9.

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TERMS: FIFTY CENTS A YEAR IN ADVANCE.

WESTERN FARMER & GARDENER.

HENRY WARD BEECHER---Editor.

JOHN D. DEFREES, *Printer and Publisher.*

Indianapolis, March, 1847.

NOTICE.

The editor of the Farmer and Gardener is not connected with the BUSINESS of the office in any manner as publisher; nor can he as a general rule, attend to matters belonging to the business department. All business letters should be sent to J. D. Defrees. If correspondents wish, along with their communications, to send errands of business, they must either put them on separate strip of paper, or so place them that they can be torn off the sheet without injury to the communication. If this is not done, the publisher will hardly see the errand; and, nine times in ten, the editor will be unable to attend to it. Attention to this will save trouble to our subscribers.

MEANS OF IMPROVING WHEAT CULTURE.

When, some years ago, the Louisville Journal published an account of an extraordinary yield of corn, it was received with great incredulity. When the most unquestionable evidence was adduced, and men were silenced, it was said that such accounts of great crops *did no good;* that they gave to our agricultural papers the reputation of telling great stories. Perhaps just such feelings may be excited if we rehearse the prodigious results of improved wheat culture in Great Britain. We will let Mr. Colman speak for us, and no one will doubt the pains that he has taken to be well informed, or his integrity of statement.

"I suppose there is no country where the average yield of wheat is so large as in England; and this product has nearly doubled within the last thirty or forty years. I am quite aware that, in many parts of England, the crops are still small, and do not exceed sixteen bushels to an aker; but on the estate of the late Mr. Coke, afterwards Lord Leicester,—where, when he came to reside on his property, it was thought, on account of the thinness and poverty of the soil, wheat would not grow,—the average yield is from forty to forty-eight bushels per aker; and I have already referred to a large farm where the crop on the whole farm, in 1844-5,—a most favorable season,—averaged fifty-six bushels per aker. These are most encouraging results; but since, beyond all question, in an instance referred to, eighty bushels have been produced, who will say that the limits of improvement have geen generally even approached? All this too has been, without doubt, the effect of improved cultivation."

Only think; eighty bushels, once; and fifty-six bushels over a large farm; and in other cases, from land naturally too poor for wheat to grow, a yield of forty to forty-eight bushels; and *sixteen* bushels, spoken of as a minimum crop!

To all this, the reader's answer will be, "a very different climate they have from ours." Do you suppose the climate is as different as is the style of *cultivation?* Mr. Colman says that the average crop has been doubled within the last thirty or forty years. Twenty-five bushels is the average crop of Great Britain; and half of that is twelve and a half, at which average, per aker, wheat stood some thirty years ago in Great Britain, before improved methods were applied. This is not far from *our* present average, and shows that no important difference exists in their favor, except such as cultivation makes. Let us look at the prominent features of the culture and enquire whether, in part, it is not as fit for us as for them.

1. The English most thoroughly prepare their soil. The wheat crop has an assigned place in a rotation system; each crop of which is skilfully related to the crop which went before, and to the one which is to follow; so that when it is the time for wheat, the ground is in the very best heart for wheat.

Then, they *plow* in England, instead of *scratching*. The plowing is very deep, and it is succeeded by harrowing, clod-crushing and rolling, variously applied according to the nature of the soil, so that the wheat germinates not only in a fine soil, but a soil "thoroughly furnished unto every good work."

2 No pains are spared to protect the ground and its treasure from wet. The improved husbandry is invariably based upon a system of *thorough under-draining*. In addition to these, and yet more carefully where no drains exist, the surface is plowed in such a manner as to relieve itself from all superfluous rains and from standing water. We can hardly imagine the pains that are taken in British husbandry, to secure to the soil enough, and only enough water. Surface-draining and under-draining are, on large and well managed estates, as common, and indispensable, as plowing itself.

3. The greatest care is taken to procure the best seed-wheat. And varieties are judiciously adapted to the various soils, and positions of farms in different parts of the empire. Neither is the preparation of the seed neglected. Indeed, nothing is left undone that wisdom can suggest, to prevent every casualty and to secure the largest and the best conditioned crop.

4. We would call especial attention to the extensive use of the drill in British wheat culture. In Great Britain, wheat is drilled about as uniformly as in America it is sown broad-cast. The rows are about nine inches a part; they are hoed once in the spring; and, such is the cheapness of labor, that the rows are often gone over by children and cleared by hand of every weed.

We do not propose to our farmers the hoeing or the hand weeding; but we think serious regard should be paid to the question of drilling wheat. There are three permanent ad-

vantages accruing: 1. The saving of seed: 2. The increase of the yield, in quantity and quality: 3. The better maturity of the *straw*. The saving of seed is not a small consideration. It is a question of great importance whether one-eighth, one tenth, one-fiftieth or one-hundredth part of the whole crop shall be consumed for seed.

If three bushels per aker yield sixteen bushels, very nearly one-fifth of the crop is taken to seed the ground; if two bushels are sown, one-eighth of the wheat crop is reserved for sowing. But if thirty bushels are raised to three bushels sown, only one-tenth, (instead of one-fifth,) of the crop is consumed in seed. On the other hand, if one bushel of wheat were made to seed an aker and to yield ten bushels, one-tenth only is consumed in seed. If it yielded sixteen bushels, only one-sixteenth goes for seed. By diminishing the quantity sown, or by increasing the yield, the proportion between the outlay and income is increased. Experiments, however, have shown that a single grain of wheat, planted alone, is capable of yielding *four hundred-fold*. It is true that such a return is not to be looked for on a large scale, for no farmer can cultivate thirty akers as he would one square foot in a garden. But, the common return in the United States is less than *ten-fold;* and this enormous disproportion between what wheat may return and what it does return; between four hundred-fold and ten-fold, cannot be accounted for on any other reason, than that of grossly unskillful cultivation.

In general culture, an increased amount of seed must be allowed for casualties; but whatever mode of sowing will save seed, improve the crop, and not increase the *proportionate* expense of the whole, is to be preferred.

By *drilling* wheat, seed is saved; the yield of that which is sown is greatly increased; by giving a free circulation to the air and space to the light the straw grows stronger, but not so rankly, The juices are more thoroughly elaborated and the stem strengthened; whereas, if thick-sown, air and light being but partially introduced, the stem is more succulent, and therefore more subject to falling, to mildew, and to other attacks.

We do not believe that the expense of drilling wheat, ordinarily, would be greater than that of sowing it broad-cast. From six to eight drills, nine inches apart, are opened, sown, and covered at each passage of the drill machine. A machine of six drills sows at each passage across the field, a strip of more than four and a half feet wide. The seed is evenly sown, in moderate quantities, without the expense of harrowing. If, now, the saving the expense of harrowing and of seed be reckoned, together with the increase of the crop, in quantity and in *quality*, inasmuch as the *quality* is improved by reason of its comparative immunity from disease and of the superior weight of kernels ripened when the crop has room enough, it is believed that drilling would be as cheap, and ultimately much cheaper than the usual mode of sowing.

It is true, that, at present, machines cannot be procured; but so soon as there is a demand, or even the chance of creating a demand, there will be little difficulty in that respect. The other objections, that only well-cleared lands will admit the use of drill-machines, that most farmers cannot afford the expense of purchasing, apply with no more force to this particular labor-saving machine than to any other. Threshing machines are expensive, yet they are already numerous, and the employment of them is steadily increasing. Reaping machines are expensive, yet the patents are every year multiplying and sales increasing; and reapers, like drill-machines, require well-cleared land for their operation.

We wish that opulent and enterprising farmers would turn their attention to this matter. We believe that a man may be a public benefactor in a much less suspicious way than offering to go to Congress, or to endure, with patient self denial, for the love of country, a fat and lucrative office. If, in each county, ten akers were put, with the least expense, to the highest state of cultivation, it would be a practical example that would be felt on every farm in the neighborhood; and the man who should, by well-doing on his own farm, gradually raise the standard all about him, would be, in an important sense, a public benefactor.

GOOSEBERRIES.

Very little is known of this delicious fruit in the west. Few have procured the improved kinds; and those who have, are but little profited by their importation. Barrenness and mildew seem to be the portion of gooseberries in our gardens.

The gooseberry loves a cool and moist atmosphere. It flourishes therefore in Great Britain, in New England, and along the northern lakes in our western States. The middle States and the middle and southern portions of Ohio, Indiana and Illinois are neither cool nor moist in summer, but fervently hot and subject to excessive drouths.

Western cultivation, as distinguished from eastern, should aim to supply, artificially, a moist and cool atmosphere, or to procure varieties which will flourish without it.

It would seem that planting on the north side of close fences, or under the shade of trees, would secure moisture and coolness; but experience shows that it does not secure *fruit*. This is rather noticeable from the fact that the wild gooseberry flourishes in our open forests and along half-shaded forest edges. But this is only one among many instances which prove, what we might have expected upon physiological principles, that a *cultivated* fruit will not endure that condition in which its *type* flourishes. Cultivation increases the wants, and changes the tastes of vegetation, as really as civilization does the wants and tastes of men. It does not follow that the early Virginia, or that Hovey's Seedling would flourish in grassy meadows and on shady hills, although in the wild state, old Gerard (1597), says: "*Straiceberries do grow upon hills and valleies, likewise in woods and other such places that bee something shadowie.*"

There has never been great difficulty in obtaining constant and good crops of the small nameless gooseberry of our gardens; and they are seldom pruned or cultivated.

The question will occur to every reflecting mind, why should the indigenous gooseberry flourish in our woods, and the hardy little common gooseberry thrive in our gardens, and yet the richer highly improved varieties fail?

The answer to this question will be an exposition of facts which relate to the cultivation of other fruits, with as much force as to the gooseberry. Almost without exception our cultivated varieties of gooseberries are brought from Great Britain. This fruit has received extraordinary attention there, from the weavers and other operatives in and about many of their manufacturing towns, but especially in Lancashire, and around Manchester. Bearing bushes may be produced from the seed in three years; and this facility has not made it worth while to pay special attention to the health of the stock, nor indeed to anything except the *size of the berry*. The soil, the pruning, the

whole cultivation has had a direct relation to the *pennyweights* of the fruit at the exhibition. This is seen from the history of the Manchester prize lists. The common weight of the gooseberry is about a quarter of an ounce. About the year 1800, prizes were given to berries weighing ten dwts.; the largest berry in 1819 was twenty-six dwts. seventeen grs. In 1825, the largest berry was thirty-two dwts! or more than an ounce and a half! (Loudon.) Downing says the largest will measure quite two inches in diameter.

In all the changes undergone, the gooseberry has undoubtedly conformed to the climate of Great Britain. Bro't to America, especially the middle and western portions, remarkably different in soil and climate from their parent land, they at once bear witness to the unsuitableness of the change. While the wild gooseberry, and the small common variety thrive, the improved sorts bear no crops, or worthless ones, except in a rare occasional year. We believe that the great proportion of foreign gooseberries will, on trial, be found unsuitable for the western States.

What is to be done? We know of but two courses, and both of them requiring time, patience, and knowledge; and therefore addressing themselves to amateurs and horticultural societies as peculiarly appropriate to their jurisdiction:

1. Foreign kinds should be thoroughly tried, and any that may prove *hardy, in our climate*, carefully selected. Undoubtedly, there are degrees of hardihood among Lancashire gooseberries, and some may be found which will thrive among us. Hitherto, the best fruits and the greatest bearers have been selected; and the judgment of the nurserymen themselves have usually been relied upon. But passing by all these excellencies, the first and indispensible qualification of the standard kinds must be, hereafter, hardiness; not to cold, but to heat and dryness.

2. *Native varieties must be originated.* Downing dissuades from this attempt, saying; "no one here will attempt to do what under more favorable circumstances, the Lancashire growers can do so much better;" and for New England and New York we presume that his direction is, in this matter, judicious. We of the west, must, however, reverse the direction and originate, for ourselves, kinds that will endure our climate.

The process is not difficult, nor protracted; three years will suffice. Let our common gooseberry be planted in the vicinity of improved kinds and crossed with the pollen; the seed planted, in pots or beds of light, rich, earth. The second year, transplanted into nursery rows; when they bear, select the best and plant again from them. In this manner not only will choice varieties be obtained, but varieties of a sufficient hardiness for our climate.

We should be glad to have our wild gooseberry removed to our gardens, planted among improved kinds so as to be impregnated, if possible, by them, and its seed planted. If to their native adaptation to our climate could be added the luscious qualities of foreign varieties, the gooseberry would become as common as the currant and more valuable.

We have been informed, we believe by Samuel Judah, Esq., of Vincennes, Ia., that a gentleman in Illinois had been breeding the gooseberry for many years, for the express purpose of procuring kinds adapted to this climate, and that he had been eminently successful. We know nothing of the particulars; not even the name or residence of the gentleman; but should be glad to learn the details of so important a trial.

Before closing this article we will mention the method of cultivating foreign varieties, recommended by Dr. Barret we believe, of Middletown, Ct., as detailed in the Cleaveland Herald:

"I saw many years ago, in Vermont, some excellent gooseberries growing in wet shady places, and among grass and plants. I also most unexpectedly found a stray gooseberry bush growing among tall rye, and bearing a full crop of excellent fruit. I give these instances to show that the gooseberry is fond of shade and moisture in this climate, and that to grow them with success in the garden, abundant dew and moisture must be provided, and this grass fully supplies. There are two gardens within the limits of this city, which have produced gooseberries from year to year, which were entirely free of scab, when all others we may say generally had their fruit ruined. These I ascertained were grown rather by negligence than design, at first among the grass. One of the gardens belongs to the Rev. Dr. Jarvis, the other to Mr. John Bliss. The latter assures me, he has not failed during about twenty years in having his gooseberries free from the scab. I purposely watched these gardens attentively as well as several others, to give a faithful report of this novel mode of culture, which promises so much. I found them nearly ripe, July 4. The berries were of the red kind, of medium size. The bushes required the aid of props to secure them from breaking under their load of fruit. As to the quantity I was highly gratified to observe that they bore as largely as the best examples that I had seen in England.

The gooseberries in the garden of the Rev. Dr. Jarvis, grew on a long strip of grass, about four feet wide. They are not, I apprehend, the largest and choicest fruit, and at first, did not keep pace with some of the lately imported kinds. The grass instead of being cut, was suffered to grow among the bushes. I was struck with the luxuriant manner they grew from the wet and dew thus afforded. While the grape and cherry were rapidly decaying, the berries of the gooseberry were entirely free from decay, being clear and bright skinned. Those in dry grounds were much diseased and the bushes had become a nuisance."

There is a necessity, it would seem, for external moisture as well as internal. It may be, that tall grass, wet with rains, or ladened with dew, will supply that want in some measure and we think it worth a trial.

To the same reason, we suppose, is to be attributed the efficacy of salt hay, which has been put under and around the bushes with success. The salt attracts dampness, and maintains a moist atmosphere, to some degree; and it may be that ashes are useful, in part, for the same reason, when dug plentifully into the soil.

Although this bush loves a *deep* and rich, strong loam, and supplies itself copiously with moisture therefrom, this will not suffice unless there is a cool and moist atmosphere without.

Stagnant humidity—the dank, motionless moisture of the air under trees and in fence corners is not wholesome. It requires freshness, circulation of air, as well as dampness; and nowhere else will this fruit quicker fall by mildew than in such confined quarters.

The experiment detailed by a correspondent in our late volume (vol. 2, p. 58,) of training gooseberries upon *walls*, is well worthy of attention. If a northern or eastern exposure be selected, the coolness and humidity requisite might be supplied to some degree by a brick wall, which by judicious pruning the bush would be subject to a free circulation of air.

An Excellent and Cheap Pudding.—Boil oranges in clear water, until you can pass a straw through the skins; then clarify three-quarters of a pound of sugar to a pound of oranges, and pour it over the fruit when hot; let them stand one night, then boil them in syrup until they are clear and the syrup thick. Take them from the syrup and strain it clear over them.

REPORT ON COMMON SCHOOLS IN OHIO.

In Ohio, or in Indiana, the superintendency of common schools is attached to one of the State offices. In Ohio, the Secretary of State, and in Indiana, the State Treasurer, is respectively, Superintendent of Common Schools. Mr. Galloway, Secretary of State to Ohio, seems to have the matter much at heart; and the low state of common schools in Ohio grieves him bitterly. He thus abruptly, speaks in the opening paragraph of his report:

"The education of our youth has, however, been so shamefully neglected, that no one can consider it a pleasant task to abase his own pride and the honor of the State, by presenting a truthful picture; one so disreputable to the highest glory of an enlightened people." That which is true of Ohio is true of Indiana. Indeed we are at a yet lower position in respect to public interest and effort in this cause. Instead of indulging in unavailing complaints, however bitterly true they may be, it would seem a wiser course to examine somewhat more narrowly into the cause of the evil and the remedy.

1. The character and circumstances of our population, should be carefully discriminated by those who would know the obstacles to education hitherto encountered. Thousands have immigrated to the west because they were crowded above what they were able to bear, in old States,—men rather necessitous, and broken;—thousands and tens of thousands of poor men reared under the deprivations of poverty, in respect to mental as well as physical good, have sought the west to expand their pittance into a fortune; thousands of bold and adventurous men have pushed in enamoured of its very rudeness and difficulties,—men made for grappling with the hardships of a new country; multitudes have been allured hither by the prospects of brisk business, and these are mostly young men.

In all colonized States there exists, more or less, this diversified population. But with us the peculiarities are made prominent in an extraordinary degree by the various origin of the people of our State.

Every State of the Confederacy is here represented; and there is almost as much difference between one and another of our older States, as there is between different kingdoms of Europe in everything pertaining to social characteristics. This population, at any rate heterogenous, is very largely mixed, now, with a foreign element, differing in tongue and customs from the American population, as much as, but hardly more than, one element of the American population differs from another.

The vast physical changes required, at once, as the means of livelihood; the immeasurable labor of building up the physical structure of society; the small means of the settlers, whose whole capital, for the most part, has been health, strength, and enterprise; these things seem enough to withstand progress. But the contrarieties and the prejudices springing from difference of origin, education, and language have presented, in some considerable degree, the exertion even of such strength as society has had.

Those who contrast the north-western States with the New England States in their early progress, should remember that New England had *time* to grow in; had no inconsiderable wealth with her population; and had men not only of one blood, but men knit together by a common faith, a common experience of suffering, and a common object; so that the whole community acted in unison upon religious and educational matters as one man.

A discordant population, with little wealth has made an eruption rather than an emigration, over a territory a hundred times larger than the whole collonial possessions, with a rapidity so great, that it may be said, with a gentle extravagance, that *time* has not been an element of western progress. Ought it to be a matter of surprise, if this population did not move spontaneously in behalf of education if there were jealousies and prejudice and an over estimate of physical prosperity? And yet, we think that the west has done more for common school education, *all things considered*, than any similar community ever did on which the sun shines. The difficulties are real and of the worst kind. It is not apathy that hinders; apathy, itself, is the effect of another and stronger cause.

The repellancies existing in a new population, disconnected in original sympathies, conflicting in customs, and still more in opinions and social usages and drawn into knots by the force of violent, centripetal sects; the almost impossibility of cementing a common public sentiment so necessary to every moral enterprise, but indispensable to the prosperity of common schools, materials having almost nothing in common except their necessities and their strife for an easy livelihood, these are the reasons of apathy.

Those who know western society the most intimately, will have the most toleration for its defects, the most admiration for its progress, and the most patience in laboring for its further prosperity. And it is in view of such an exposition that we think the language of fretful impatience, of disponding censure, and of wholesale blame to be as unjust as it is impolitic. Of all people on earth, ours are the least disposed to be beaten or badgered into any reformation.

2. In every community, the educated portion, owe common schools, to the uneducated part. Professional and educated men are the natural guardians and champions of free schools. In Ohio and Indiana, they *have* felt a deep interest in common schools; yet we have somewhat against them. It is not *interest*, or wishes, alone, that will avail. There must be patient and protracted effort, and effort systematically organized. In this respect the educated classes have erred much. Let one consider how little is said to the ten thousand who are moved to progress only by influences from without. Politicians never mention the topic; newspapers deal rarely and then, but cursorily in the matter; and what is yet more lamentable, and more surprising, the clergy have not exhibited the half, nor the quarter of their influence in behalf of this cause. It is our belief that if this single class of men, would make the cause of common schools a part of their regular duties, they have influence enough to secure the co-operation of the whole community.

While legislation must perform an important part in the establishment of common schools, legislation itself is powerless without support from the community. Ohio is a memorable example. Her laws require a statistical return of the state of schools in a number of particulars; this duty is laid upon public officers. The statements in reference to the carelessness and utter delinquency of school officers very plainly shows that these men have little interest in themselves, and little motive from without, in behalf of public schools. From more than one-third of the counties (one half, lacking only *nine*) no returns whatever seem to have been made. The rudeness and insufficiency of more than one-half the returns actually made, are such as to render them, comparatively, useless. Mr. Galoway says that "it would be cheaper and more reputable to remove from all officers the responsibility of preparing or presenting returns, than to receive annually representations which torture public expectation, caricature the school system, and alienate sympathy and support from a cause so dependent for vitality upon public patronage."

Public officers seldom neglect duties which the people, or even the intelligent portion of the people, are anxious to have performed. If the intelligent citizens of every county, with the professional men, may, if but the clergymen, would steadily press upon public attention the interests of common schools, the work would be done, and laws would flow forth just as fast as the cause could be benefitted by them.

The western states above all others, and especially at their critical and transition state, require a separate officer, as Superintendent of Common Schools.

To make the superindendency of common schools a mere adjunct and supplement to the secretaryship of State. is quite absurd. Look at the facts. There are in Ohio between 10,000 and 11,000 whole, and from 1500 to 2000 fractional school districts. These are distributed through eighty-three counties. The Superintendent of Common Schools should have cognizance of the general condition of education in all these. He should awaken public attention when it is dormant, and direct it aright when it is awakened. To secure good teachers, to procure the constant rejection of bad teachers; to ascertain the condition of school funds, to advise in respect to school-houses, to lecture from county to county, call out and attend local or general conventions, to combine the efforts of all, now labor scattered; all these things, together with official correspondence, the digest of the same for the annual reports, would overtask the strength of five men, and each one a Hercules.

To put such an office upon the Secretary of State, an officer having more than enough to do in his peculiar functions, is so unreasonable that we marvel at it in a State proud of its intelfigence. We had been ashamed at the backwardness of Indiana; but in such reputable company, we need not hang our heads, fellow-citizens! If the cause of common schools does not deserve a superintendent, exclusively, it had better have none at all. To tack on the duties of this great trust to an already over-tasked officer, is to quiet the public with only the appearance of interest in behalf of schools. By seeming to take charge of schools the State relieves its citizens of the responsibility; and if then, the State neglects its charge, schools will be at the same time betrayed by the government and neglected by the people.

CHINA TREE CORN.

We well remember when it was announced that in an importation of goods from China, a few stray kernels of strange corn had been found; that, on planting, it was found to surpass all known corn; that the ear grew on *branches*. It sold for twenty-five cents an ear, and China tree-corn was all the rage; but in a year or two a change took place, and the rage was then with those who had bought it; and had, as they said, been humbugged. This corn has been raised largely in this county. We remember several years ago, to have seen a large cribfull at Mr. James Blake's, of this city, and we have observed frequently in our common corn a large infusion of the *blood* of the China tree-corn. Mr. Foster in the January number of the Tennessee Farmer says, incidentally, that as far south of 40° and below it, it has succeeded well, and very nearly answers the original representations. "On soils of a medium quality, it would out yield most varieties. It also made the best and sweetest meal; and the crop would turn out the greatest quantity of fodder, and of the best quality, (owing to its abundance of leaves,) of any corn known." This is important testimony and is the result of several year's trial on the part of Mr. Foster and others. Have our readers ever made a faithful trial of the variety? There are two reasons for calling attention to it.

1. Large shipments of corn meal are to be hereafter annually made to Europe, and a corn that produces the *best meal* is of unusual value.

2. Many have adopted the wise practice of sowing corn broad-cast for fodder. If the China tree-corn has preeminent excellencies for this purpose, let it be known.

CAN IT BE TRUE?

An intelligent subscriber writes; "I would endeavor to procure you some subscribers, but I do not believe the world—that is, hereabouts—is ripe for reformation in horticultural pursuits. Mankind—the *masses* I mean—must receive a wide and more liberal *education*, before they can be induced to undertake the examination of books or papers. Here the fault lies: — It would be difficult to procure subscribers to a periodical amongst unlettered nations. Only few, comparatively speaking, amongst *us*, are capable of receiving benefit from a work, which, like yours, is designed to illustrate those very subjects that most deeply concern them."

These statements are from a citizen of this State; and are worthy of especial remark. If true, they furnish the strongest reason for exertion. Men who are unused to reading, should be persuaded to read. Many would refuse a paper for *themselves*, who would take it if urged upon them for their *children's sake*. Editors sometimes reproach men for reading *borrowed* papers. But we say to our subscribers, *lend* the Farmer and Gardener to all who doubt the benefit of such reading; tell them frankly that you expect them on perceiving that there is practical advantage in agricultural papers, to subscribe; and then, in their turn, to persuade others. Be not soon discouraged, and never give way to impatience of temper. It does no good, and very often it will be unjust. It is the duty of every intelligent citizen to help to enlighten others. This cannot be done by assuming a superiority; by exhibiting yourself as *above* them; or by reproaching them with ignorance. No such thing. Provide good schools for the young; stimulate young men to read, by providing suitable and attractive papers; put reading matter, as far as possible, into each neighborhood, and it will most certainly act as *leaven*.

Among other reasons, we have put the Farmer and Gardener at a price which will enable all who are inclined to diffuse information to do it without great expense. There is many and many a farmer who would like to show some young man in his vicinity a mark of kindness; perhaps he has just come of age, and may have been a faithful laborer for years in your employment; or he may have stood by you in some trouble. What more appropriate token of respect than to present him the Farmer and Gardener for a year? It will come every month to remind the recipient of your friendship.

As to our correspondent: Will he not make full proof by personal trial?

Another esteemed friend in Ohio writes, that he spent two days in visiting the most wealthy and enterprising farmers of his neighborhood, and procured but *two*. Men who have got rich on large farms are less likely to feel the need of a paper than beginners and young men on small farms.

FIRST ANNUAL REPORT OF THE OHIO STATE BOARD OF AGRICULTURE, for the year 1846. We are indebted to the accomplished editor of the Ohio Cultivator for this Report. We have examined the Report of this Board with no small interest as intimately connected with a similar organization in Indiana. The late General Assembly passed a resolution recommending the resuscitation of the Indiana State Board of Agriculture, and passed a bill appropriating a small sum to defray their expenses. We shall have occasion to compare the two forms of organization existing in Ohio and Indiana, and shall then present portions of the contents of this report.

CULTIVATION OF CORN.

The most valuable grain of the west, is, beyond all question, Indian corn. Every year its importance increases. There is no other staple so nearly universal in its uses. It is profitable for exportation, and every year increases the demand. The late arrivals from England inform us that a million bushels per month will be required in Great Britain until August. At home, what other article enters so largely into domestic use, with the single exception of wheat?

Is the *average* yield per aker, in the west, increasing or decreasing? We should be obliged to our correspondents if they would make up a careful estimate for their several neighborhoods. We do not doubt but that, here and there, will be found single farmers who produce occasional crops which are very large; nor do we doubt that fresh soil produce as bountifully as fresh soils in the west have always done and will continue to do. But, upon well cleared farms, is there a regular and general *increase* of the annual yield per aker; or is it stationary? or is it not decreasing?

A very large crop from new soil is no evidence of skilful farming. The farmer cannot help himself, if he will give the soil and climate a fair chance. But to take credit for such crops is as foolish as it would be to take credit for the growth of the forest timber on the farm; or for the fatness of the wild turkey that fed upon its mast.

American Phrenological Journal.—O. S. Fowler, editor, New York. We have received the monthly issues of this scientific journal for 1846, and the first and second numbers for 1847. We are glad to perceive the industry and success of our colleague, friend and colaborer in mental philosophy. Fowler is a vigorous thinker, and a strong writer. In exact conformity to his organization is his mental action. Comparison, benevolence, fairness and conscientiousness, with an active partnership of self-esteem and approbativeness, are, if we remember aright, his prominent points. His writings evince the reflective over the perceptive faculties; the warmth of the moral organs more strongly than the cold perceptions than the scientific or observing faculties. We regard Fowler as at home when reasoning analogically upon a moral question. Above any other journal of our acquaintance, this work deals with new questions, and unsettled principles. To those who are unable to digest new matter it would prove harmful. But to those who are patient of thought, and who can sift the wheat from the chaff the Phrenological Journal could not fail to be of great benefit. We are obliged, and upon phrenological grounds too, to differ from it upon many material points.

Subsoil Plows.—We are glad to know that the repeated recommendations of the subsoil plow by the Farmer and Gardener, have induced several gentlemen to procure and try them. We are equally well pleased to hear in each case an unqualified approbation of them. Mr. James Blake, of this county, has tried them, and if any farmer wishes to know their benefits, let them go and ask him. We were told by Mr. Watts, from Monroe county, that one of the best farmers in his neighborhood has tried, and been delighted with the results of subsoiling. He thinks it to be the only kind of plowing fit for thorough cultivation.

The time of plowing is now at hand. Will not our farmers look to this? For ten dollars a good subsoil plow can be had either at Indianapolis or Cincinnati. Will not our readers report to us the success or failure of any trials made by themselves, or made under their observation by others?

COMMUNICATIONS.

REVIEW OF EMERSON'S TREES AND SHRUBS OF MASSACHUSETTS.

At the close of an introductory notice of this work by the editor, he expressed his intention of making further drafts from the Report, either by his own hand or by that of another person It is at his request that I have undertaken to examine this publication for the benefit of the readers of the Farmer and Gardener, including, of course, myself in the category of those to be edified.

Copious, accurate, minute, chaste in style,—the Report is as near complete, as a work of the kind can well be conceived to be, to consist chiefly of letter-press. A man of reasonable susceptibility can hardly rise from the perusal of this work, without having fallen in love with his wood-lands, if he had not made love to them before; and that which we love we will not wantonly destroy.

The idea, however, of cherishing a forest, is, to a western man who dwells in the midst of a

"boundless contiguity of shade,"

somewhat ludicrous. Potatoes cannot be raised under a beech tree, nor will grain flourish in the dense woods: the land must first be cleared of these incumberers of the soil: that which would shed warmth upon thousands of shivering poor, must of necessity be scattered to the winds. We must apply the axe. But this is not the question: to apply it with judgment; to apply it as the engraver applies his instruments to the copper, or the sculptor his chizle to the block of marble, so as to produce out of the dull monotonous woods, that picturesque effect for which some countries are so remarkable; and to apply it with that skill and forecast which will most tend to the preservation of those woodlands which *need not* be destroyed; and those particular trees which *ought not* to be molested: these are the questions which concern us all. To watch the axman prostrating in a day, a majestic oak, which has been adding particle to particle for five hundred years, until it has built itself up to its present august dimensions, the admiration, perhaps, of even those beneath its shade, never conveyed to my mind any agreeable sensations. Five centuries are not at the command of a single generation of men: the tree that we cut down to-day, however much we may regret its loss at a future period, cannot be replaced in an hour. The foreseeing man will therefore take a general survey of his lands, consider where his richest soils lie; (for there he will wish his fields to be;) where there is a spring or a rivulet, or a spot, easily converted, perhaps, into a pool for the finny tribe to sport in, where he may desire to build; where he expects to preserve his sugar-tree grove as a matter of profit, what timbers he will probably need in all time to come; and in a word, where some day he may be glad to have it in his power to preserve a shade; and carve out the woodlands accordingly.

But I had no expectation, when I began, of detaining the reader so long, from our more immediate purpose. One of the most important uses of timbered land is, in all countries which are not hot enough without it, that of furnishing us with

FUEL.

Many a backwoodsman will be surprised to hear, that fire-wood is sometimes as high in Indiana as it is in some parts of Massachusetts. Not unfrequently during the winter, wood is sold in this county (Wayne,) at two dollars a cord; the usual price in the summer months is one and a fourth dollars. In the western counties of Massachusetts, wood is sold at two dollars a cord; in the eastern portions of the State at six dollars; and the average price throughout the State is estimated at about four dollars. The average annual consumption of fire-wood throughout the State, is supposed to be thirteen cords for each family; some families consuming only four cords; and others variously up to thirty cords. The consideration of

OTHER USES,

to which timber is applied, is well calculated to make our woodlands grow into consequence in the mind of every reflecting man. Besides its application to the great purposes of building houses and ships, the construction of furniture

carriages, machinery of various kinds, coopers' ware, fence, all the implements of husbandry; there are the multitudinous uses of it for lasts, and canes, and toys, clothes-pins, bowls, tubs, butter-prints, pumps, axe-helves and handles to a thousand things, baskets, planes, gunstocks, and a long list of et-ceteras: and then there is the tanner who comes in for its bark; and the dyer for its coloring matter. "Of minor importance," says the author, "but of much more than is usually given to it, is the production of

NUTS OF VARIOUS KINDS,

the fruit of forest trees. The produce of the shell-bark, chesnut, beech, hazel, and acorn, already valuable, might be increased in value almost indefinitely, by selecting the best varieties and improving them by processes similar to those, to which we owe the fine varieties" of other fruit. This is a subject to which I would call the special attention of nursery-men; particularly such as are most likely to transmit their incipient experiments into the hands of their sons or others, for continuation.

CULTIVATION OF A FOREST.

The author justly condemns the practice of robbing our woodlands of their fallen leaves, if we have any interest in the preservation of the timber; or in the renewal of a forest after the old one is cut down. And he advises that every tree and every branch should be allowed to have an ample supply of light and air; and recommends the common principle of pruning as applicable to forest trees; and then adds: "In many hard wood trees, shoots spring vigorously from the stool or stump, after the trunk is cut down; and this mode of reproduction is chiefly relied upon in most of the woodlands of the State. It becomes, then, of great importance to ascertain what are the best modes of felling, whether by thinning out the forest or cutting it entirely down; in what period a wood, so cut down, will renew itself, so as to be profitably cut again; at what age of the tree the stump will shoot most vigorously; at what age, if any, trees cease to shoot from the stool; what trees will not thus shoot; what season of the year is found best for felling a forest, when the object is to have it renew itself speedily; and what season, when the object is to destroy the forest."

Many of the readers of this paper, will probably feel that they have no interest in the answers to any of these enquiries, except that that may be given to the last: at what season may a forest be best destroyed. But I suspect there are others in the northern portions of our State, who feel more deeply concerned for the continuance and production of timber, than for its destruction.

The great expanse of prairie lands in that section, has already enhanced the value of timber; and on a visit to Laporte some years ago, I observed at least one forecasting farmer, had planted a locust grove (Robinia,) which was then in a flourishing condition, and served the purpose of protecting his house on the north and west sides, I think, until he should find it necessary to convert it to other uses. Then again, I remember dense groves of oak and other trees had sprung up since the present settlement of the country, and I suspect are at this time in a very fit condition to be treated according to the economy practiced in older and more experienced countries. These and other considerations, encourage me to condense the result of the author's researches as follows:

1. To renew a forest, the timber should be cut clean and close. Where woods are thinned only, the remaining trees are liable to be wind-shaken, and are often destroyed by storms; and the new growth being shaded, is sparse and feeble. But where a new forest springs up, it accommodates itself to all circumstances of the elements.

2. Wood entirely cut down, will renew itself so as to be profitably cut again in ten to twenty years if it be white or grey birch; twenty to twenty-five years, if maple or ash; oaks may be cut again in twenty to thirty-three years. "Cedar swamps, which grow from seed, cannot be profitably cut in less than forty years." Pitch-pines from seed, in not less than forty to sixty years. Burning over the surface, plowing and sowing with rye, is recommended for pitch pines, but strongly condemned for the hard woods.

3. Most kinds of hard wood are worth more by twenty or thirty per cent. for fuel, at the age of twenty-five years, than at seventy-five; and the trees best for fuel shoot again most readily and vigorously when cut under twenty-five years.

4. We all know that very old trees yield no permanent shoots from their stumps; but many of our western trees furnish them from their roots; and some of them in the greatest profusion. Evergreens never give permanent shoots from their stumps. The sugar-maple stump makes no shoots, and the same is said of the beech stump; [but I have often critically examined the origin of shoots which sprang from the summit of a beech stump, and also from a single incision of an axe, in it. I have no clear recollection of their duration. J. T. P.]

5. When the object is to renew the forest, the trees should not be felled when in leaf. Some prefer the winter, for convenience and the quality of the wood; others the spring, for the greater benefit of the future growth.

6. When the object is to destroy the growth, summer is universally preferred; and that month, in which the tree has, for that reason, attained its full growth.

NATURAL ALTERNATION OF FORESTS.

"Every tree must perish when deprived of its necessary food. It is not surprising, therefore, that in many soils, the trees should at last be unable to obtain sufficient nourishment" should "cease to grow, and finally perish of inanition." The soil that fails to sustain one kind of tree, may contain abundant food for another class. Hence we often find one tribe of trees succeeded by another. Maple wood has taken the place of spruce and hacmatack. Beech and maple have followed white pine, oak and chesnut. "Oaks and pines most frequently succeed each other;" oaks coming after pines, and pines after oaks. White birch supplants hemlock, in cold places; and hard maple does the same in warm ones. Maple, elm, &c., have taken the place of beech.

In reference to trees perishing of inanition, I will here state, that in 1845, I was surprised to find a considerable number of my forest trees entirely dead, in places where I had before seen none but living ones. On examination it was discovered, that in every instance, the dead tree was a red-oak. (Quercus rubra.) All around stood white oaks, walnuts, beech, sugar-tree and other species, in a flourishing condition.

It would be desirable to complete the catalogue of trees which spontaneously precede or follow one another; and the task would not be difficult, if farmers would but *observe*. It is not necessary for them to go into the woods with a head full of Latin, nor their hands loaded with costly instruments: all that is necessary in this case is, an open eye and common sense. The questions to be answered are: What trees succeed or precede the walnut, buckeye, ash, tulip tree, hickory, and all other trees not named by the author, as above cited. When they have found satisfactory replies, it does not require much eloquence or talent of any kind to name the tree. Where is the farmer who, thus equipped with information, could not sit down and despatch a note to the editor saying: I have found by an examination of the prostrated and nearly decayed trunks and old stumps in my woods, that the former forest was chiefly elms, and the present growth is &c. Or: My woods are now everywhere springing up with &c., where formerly I cleared it of &c. whatever stood there before. A man who never opens his mouth, will not soon learn the art of speaking; and he who never takes up his pen, will never learn to write.

We have thus hastened over some of the preliminary matters; and in future numbers it is proposed to accompany the author through his book, with the assumed privilege of plucking such of the fruits of his labor, as may be most welcome to the readers of the Farmer and Gardener. And for the encouragement of such as may be disposed to doubt the adaptation of the author's refinement to their rusticity I will stand out of the way, and let the author speak for himself, as follows:

"It is not written for men of science, * * *. But it is for the common, unlearned citizens, who live on farms, in the country, and have few books and little leisure. It is, as far as possible, for it cannot be wholly, divested of technical language, in order that they may understand it. And it will accomplish the purpose for which it was written, if it awaken them to a deeper sense of the value of some of the blessings by which they are surrounded,

and lead them or any of them to resolve to preserve the old forests and plant new." J. T. P.

EXTRACTS FROM LEIBIG.

Mr. Beecher:—With your permission I will transcribe a few passages from Professor Liebig's work on "Agricultural Chemistry," accompanied with a few comments, and ask their publication in your useful journal. Though the work of Liebig may not be free from errors in every respect, yet it possesses sufficient merit to entitle it to examination by all those capable of following the author into his immense storehouse of chemical knowledge. I shall not, in the selections which follow, confine myself to any particular subject, but shall endeavor to furnish some of the more curious and interesting paragraphs of this great work on a subject of paramount importance to the farmer. And first, I beg to present the author's opinion on the worthiness of agricultural occupations.

"There is no profession," says he, "which can be compared in importance with that of agriculture, for to it belongs the production of food for man and animals; on it depends the welfare and development of the whole human species, the riches of states and all commerce; nor is there any other profession in which the application of *correct principles is productive of more beneficial effects, or is of greater or more decided influence.*" How important, then, that these "principles" be correctly understood by the husbandman!

In endeavoring to disprove the opinion that carbonic acid does not serve as food for young plants, Liebig says: "Many conditions are necessary for the life of plants; those of each genus require special conditions; and should but one of these be wanting, although the rest be supplied, the plants will not be brought to maturity. The organs of a plant, as well as those of an animal, contain substances of the most different kinds; some are formed solely of carbon and the elements of water, others contain nitrogen, and in all plants we find metalic oxides in the state of salts." Now, heaven having furnished the climate, it is the duty of the farmer to supply the soil with whatever ingredients his vegetation may require for its full development. But how shall he do this if he is ignorant of the chemical composition of the different plants which he desires to bring to the fullest perfection? Indeed, he may supply the necessary ingredients to the soil by manure—by accident; precisely as the boy feeds his new-caught pet; if it refuses corn he offers it meat. The farmer sees his crops year after year growing lighter; the "conditions necessary for the life of the particular class of plants which he is desirous of rearing he does not understand. He resolves, however, to manure his land, but unfortunately applies a sort of manure entirely unsuitable to bring the plants to maturity. Thus he is foiled in his attempts, and he hastens to conclude that his land is worn out; when, had he labored understandingly, a moiety of the labor ignorantly thrown away would have renovated and made fruitful his barren fields. Considerations of this kind might *assist* some folks in arriving at just conclusions respecting the destruction of fruit trees. All the "conditions necessary for their lives" are *not* furnished, or else, other *conditions*, absolutely incompatible with their lives, are superadded, viz: the frosts of our winters. But, in another place, I may have occasion to allude to this subject.

The contrast brought about by the art of culture, between species of the same kind, is quite wonderful. A squash the size of the fist may furnish a seed which, placed in a more salubrious and highly cultivated soil, may not only produce a vine of immense dimensions, but also, squashes, in the aggregate, weighing several hundred pounds. On this subject the professor speaks thus: "We do not know what height and strength nature has allotted to plants; we are acquainted only with the size they usually attain. Oaks are shown, both in London and Amsterdam, as remarkable curiosities, which have been reared by Chinese gardeners, and are only one foot and a half in height, although their trunks, bark, leaves, branches, and whole habits evince a venerable age." These oaks, if I may use the expression, have been starved and stinted, having been allowed only a sufficiency of nutriment to preserve life.

"Now it is the general object of agriculture to counteract those influences capable of degenerating, or lessening the growth; it is its object to nourish the plants under its management in the most plenteous manner, so as to cause them to attain their most remarkable size. And it is the special object of agriculture to obtain an abnormal (unnatural) development and production of certain parts of plants, or of certain vegetable matters, which are employed as food for man and animals, or for the purpose of industry." This last object we occasionally see our orchardists practice when they remove a ring of bark from a limb containing young fruit. The sap is, in this manner, interrupted from passing so freely back to the body of the tree, an undue quantity is furnished to the fruit thus situated; the consequence of which is an abnormal, or unnatural size given to the fruit. Vines are likewise pruned, on the same principle; that is, with a view of furnishing the fruit with a larger quantity of juices; and the blossoms of potatoes are removed for the purpose of giving the tubers a large size.

It is a truth, confirmed by the universal experience of mankind, that land is not impoverished, though it has yielded hundreds of crops, provided an equal amount of vegetable matter be supplied annually to that with which it has parted. Now the undisturbed forest and the wide-spread prairie, though they send forth yearly such immense quantities of vegetable substances, that, were it not for the wise provisions of nature, would be sufficient to, after a few years, make them barren deserts, yet once a year they yield back to the soil in the form of branches, leaves, straw, &c., an amount equal to that which their roots have extracted. Professor Liebig uses the following language touching this sublime provision of Beneficence: "All the innumerable products of vitality resume, after death, the original form from whence they sprung. And thus death—the complete dissolution of an existing generation—becomes the source of life for a new one!" Though particular spots of the earth, by unprincipled hands, have been robbed of their riches and made barren, yet no conclusion is more just than this: that in food for plants, the whole earth is just as rich as ever she was. It is, therefore, important that these riches, like the dews of heaven, be equally dispensed everywhere.

The analyses of plants, in some instances, have furnished salts, the origin of which could not very easily be detected, for the most carefully conducted experiments failed to exhibit them in the soil. Sea-water is known to contain innumerable salts in a state of solution, and, accordingly, to the ocean Liebig goes for an explanation of this difficulty. "By the continual evaporation," says he, "of the sea, its salts are spread over the whole surface of the earth; and being subsequently carried down by the rain, furnish to vegetation those salts necessary to its existence. This is the origin of the salts found in the ashes of plants in those cases where the soil could not have yielded them." Iodine, a simple element of nature, till a few years ago unknown, is found sparingly in the ashes of sea-weeds, and more largely in Fuci or sponge; but I believe the most accurate tests have failed to exhibit even traces of it in sea-water itself, altho' there can be no doubt of its presence in the ocean. "These plants," Liebig remarks,—that is, the fuci &c.,—"are collectors of Iodine just as land plants are of alkalies; and they yield us this element, in quantities such as we could not otherwise obtain from the water without the evaporation of whole seas." But I must bring this, already too extended a communication, to a close, reserving for a second some further considerations. W. Matthews.

BIG FRUIT.

When Wayne county reported the weight of her enormous pippins to the Farmer and Gardener, I suppose she did not expect to be met immediately by Ohio with thirty-four-ounce apples in her hand, as stated by the editor in the closing number of our second volume. Well, it is too late now for Wayne to search among her pippins for still larger than Ohio's; but I venture to say we can excel Ohio in quoting stories of huge apples, if we can't grow the fruit itself. Pinkerton who hails from the year 1800, citing Tooke, who, if I remember rightly, was for a long time a resident in Russia, and "saw, and sure he ought to know," says: "Large orchards are seen in the middle and southern parts of Rus-

sia, ... antities of fruit are imported. While apples, and pears ... found as far north as the 49° plums and cherries exten... the 55° What is called the Kirefskoi apple *often weigh... pounds*, is of an agreeable flavor, and will keep a long ...."

Last ... appears to have been as propitious to the other continents to ours, in the horticultural line. The Courier des E... this says: "The year 1846 will be remarkable for pro... fruits of a size before unknown in France. A gard... of Montreuil has presented to the king peaches of thirty-three centimetres in diameter (nearly thirteen inches,) and in the environs of Paris ananas of sixty-four centimetres (twenty-five inches.) We frequently see at Fontainbleau bunches of grapes that weigh one and a half kilogrammes (three and one-third pounds, avoridupois.) The largest pumpkin of the market of the Innocents weighed 197 kilogrammes (434½ lbs avoirdupois) and a child of three or four years old could have easily slept in it. Everywhere at the fruitsellers shops and restaurants we see apples, pears, potatoes and beets of a size really enormous."

J. T. P.

FARMERS IN THE LEGISLATURE.

I have watched the action of the last Legislature with considerable interest, expecting that something would be done for the encouragement of agriculture; but in this I am disappointed. Those representatives who were farmers appeared to have no common interest, no concert of action; they seemed perfectly satisfied with their present condition; and evinced no wish to improve or raise the standard of the laboring classes, or to keep pace with the progress of agricultural science in our sister States. A bill bearing the impress of the broad hand of a farmer was destined, through much tribulation, to pass on to the table or under it; for example, a farmer managed to get a bill before the House to require drovers to mark their animals, and thus prevent their driving off other than their own property; but this small favor was denied. Another farmer, from the north, introduced a resolution instructing the committee on agriculture to inquire into the expediency of passing a law to impose a fine on any owner or occupant of land, who shall suffer Canada thistles to mature or produce seed on his grounds; but the committee, after being furnished a bill and requested to report it, refused entirely to do so, and reported the resolution back to the House, without any action; and when a bill was introduced by a select committee, farmers pounced upon it as they would upon a wolf in their sheep-yard, and the friends of the bill were compelled to recommit it to a select committee and confine it to a few of the northern counties. What can we expect as long as farmers will not defend their own interests? Lawyers have introduced their bills, mechanics have attended to the lien law, canals have been attended to, corporations of various kinds have been chartered; but let the farmer point out any benefit he can hope to receive, of a general character, from any law of the last Legislature?

It is unreasonable to foster prejudices against the learned professions at all; but it is even more so when the laboring classes take no stand, claim no rights, and use no efforts to advance their own interests. I see no good reason why the farmers of Indiana should not unite and throw state and sectional prejudices aside, and by an interchange of sentiment and friendship advance the common welfare and respectability of our State.

FARMER.

INDIANAPOLIS, January 28, 1847.

Remarks.—Although dated at Indianapolis, our friend resides in the extreme north of the State. At the time his article was penned he was not apprized that a bill had passed the Legislature, giving the State Board of Agriculture jurisdiction in the matter, and making a small allowance for their expenses. We hope that this, the first of a long series of beneficent steps of legislation destined to put Indiana far above her present position.—ED.

RENOVATION OF LAND BY DEEP PLOWING.

RICHMOND, Wayne County, Ia., Jan. 29, 1847.

My present object is, to give a short account of an experiment I tried the last season and the result. I have a small field which formerly had been sown down in timothy and clover; but for many years previous to that time, had been severely cultivated, according to the early mode of this country, until it was so much impoverished that the soil could not produce a crop of grass that would pay for cutting; therefore it was pastured while in grass, which was five or six years. This was considered the poorest field on the farm. Last spring in the month of April, with a strong team and a good plow, I broke it up in the following manner: The plow cut a furrow about five inches deep, and for the want of a subsoil plow (as we have none in this neighborhood) a second furrow was plowed in the bottom of each preceeding one, nearly of the same depth, breaking up the ground thoroughly, to the depth of about nine to ten inches; the second furrow was performed by having a pin in the clevice at the end of the beam, by which the plow was thrown off from the land into the furrow previously made. After the plowing was completed in this manner, the ground was thoroughly harrowed both ways of the furrow and diagonally, with an iron-toothed harrow, until perfectly pulverized, then furrowed out and crossed for planting in hills three feet each way. I intended to manure it all in the hill when planted, as without such treatment I thought there was no reason to expect a crop worth attending to. But at the time for planting, there came on an universal wet spell of weather, and after the rain had ceased, and the surface was dry enough to plant, the under-soil was so soft, that the wheels of the wagon would sink to the depth it had been plowed, rendering it so difficult to get through, that I planted it without the intended manure, believing that if I got no crop of corn, it would prepare the soil for a future one. When the corn came up the cut worms came with it, and eat it almost litterally up. It was replanted and again eaten off; much of it entirely destroyed. What was left continued to look yellow and weakly until near harvest time, when its color was changed to a thrifty green, and began to grow very fast. After planting I never put a plow in it, but used the cultivator exclusively, and kept the ground constantly clean and mellow.

One end of the field lay near the farm-house within rambling distance of the poultry, which destroyed the worms on that part to a great extent, and the corn on that portion of the piece grew better and yielded better than the balance of the field. When the crop was gathered I measured a piece off of this best end, and measured the corn accurately. The yield was 113½ bushels to the aker. The balance of the field was measured in the wagon body—measuring one load first, accurately; being the body even full. By this measurement the whole field averaged seventy-five bushels to the aker. I am well satisfied, that if this piece of ground had been broken up and tended in the ordinary manner, there would not have been one half the quantity of corn produced. The land lay high and rolling, the soil partaking largely of clay.

My object in this statement is, to induce more experianced practical farmers to test its benefits.

WM. R. FAULKE.

P. S. Is there any mode of destroying the sour-dock except by eradicating it? This is a tedious process.

We do not know of any other way; but some of our readers may; if so, let us hear.—ED.

ORIGIN OF FRUITS.

CINCINNATI, January 10th, 1847.

Mr. Editor: — Are we in the back woods, bound to believe all we read from the pens of their great horticulturists in the East, or may we, with becoming modesty, doubt the correctness of their assertions? In the late horticultural report of the New York American Institute, it is said, that "all our fine plums are derived from the austere sloe, our finest pippins from the wild crab, and that our best native grapes are changed by cultivation from a fruit so sour that a fox would turn up his nose at them, to be a superior table fruit." I have been accustomed to see the plum for the last forty-five years in the different western States, and where they had been produced from seed for centuries; bearing no resemblance to the sloe, and none of the latter tree near.

The crab apple, I have for the same period seen in the wilds of the west. As an instance, I name the great Crab Orchard of Kentucky, and though increased for ages from

seed, have seen no improvement in the quality of the fruit. I have always found the native grape in its wild state, where fully exposed to the sun and air, as fine, as after years of cultivation in the garden. The only change I have discovered is, that close pruning, improves the size of the bunches. But where properly pruned in the garden, I have found the bunches of fruit as large and as fine the first year, as after forty years of garden culture. He also speaks of our "delicious Beurré pears being derived from a fruit so astringent, hard, and stony, that animals shun it." And as he does not give it a name, I presume it is deemed improper to name it in a Christian community. If I mistake not, the same writer in a book of his, says, the nectarine was produced from a peach stone. Millions of seedling peaches have been raised in these States, but I have heard of a single instance only, where a nectarine was said to have been produced from a peach stone; (the Boston.) Perhaps the writer will explain it on the ground that the day of miracles is passed. We naturally look to you to correct our errors, and request your views. Do you expect us to believe that in the short seasons of Scotland, ten crops of grass are produced, as a late writer asserts, from whose work you recently gave some extracts? If I am to believe this, I shall not find it a difficult matter to believe all the great horticulturist, Bridgeman, has asserted.

A BACKWOODSMAN.

METEOROLOGY.

WOODWARD COLLEGE, Cincinnati, Jan, 29, 1847.

Friend Beecher:—In presenting you with a summary of Meteorological Register for December 1846, I would remark that it has been marked by very striking characters, and that a register of the weather, or a summary from it, kept in the interior of Indiana, would be very interesting to many of your readers, especially to me. I regard it on the whole, as the most remarkable winter month that has come under my observation.

Summary of the Meteorological Register, kept at Woodward College, Cincinnati, for the month of December 1846,

BY JOSEPH RAY, M. D.

Least height of thermometer - - - - -	19°.
Greatest height of do. - - - - -	66°.
Monthly range of do. - - - - -	47°.
Mean temperature of month - - - - -	39°.83
Mean do. at sunrise - - - - -	36°.1
Mean do. at 2 P. M. - - - -	44°.8
Coldest day, December 19th,	
Mean temperature of coldest day - - -	25°.
Warmest day, December 31st,	
Mean Temperature of warmest day - -	62°.5
Number of days of rain and snow, 12.	
Perpendicular depth of rain and melted snow, 9.25 in.	

All the snow melted as it fell, except that on the 16th, which was mixed with sleet.

Weather.—Clear and fine 11 days; variable 6 days; cloudy 14 days.

Wind.—N. 2 days; N. E. 3 days; E. 3 days; S. 2 days; S. W. 7 days; W. 13 days; N. W. 1 day.

Observations.—This month has been remarkable in several respects.

First. The average mean temperature of the month of December, at this city, during the last twelve years, is 33°; so that December 1846 has been nearly 7° warmer than the average.

Second. The months of December 1845 and 1846, have both presented remarkable deviations from the mean temperature, but in opposite directions; the first being 8 degrees colder, and the last 7 degrees warmer than the mean; thus making in two successive years the striking difference of 15 degrees in the average of mean temperature of the same month.

Third. For the period of twelve years, ending with 1846, the average amount of rain and melted snow for the month of December is 3.37 inches, while the rain and melted snow in December 1846, has been nearly *three* times this amount. December is generally one of the driest months of the year, while in 1846 it has been the wettest, the quantity of rain and melted snow being about *one-fifth* of the annual average of the whole amount that falls at this city.

SELECTIONS.

MANAGEMENT OF HONEY-BEES.

The rendering of the moth powerless to do harm, simply through the ability of the bees to *protect themselves*, may be illustrated as follows:—

In a thoroughly strong stock of bees the moth has never, as yet been known to obtain a lodgment to undermine them; if *all* stocks can be kept in a strong condition, it follows that *no* stock will be undermined. Now a swarm or stock of bees is strong, and able to resist the moth, in the ratio of their numbers to the area to be defended. A thousand bees at work in the corner of a hive covering fifty square inches of comb, are as fully able to protect themselves against the moth, as twenty thousand bees in a full hive. A stock is strong when every part of the comb is densely covered with bees, and a surplus is found below unable to get admission, without any regard to the size of the hive, and all such stocks *will* defend themselves succesfully against the attacks of the moth; but the question is, how can we always have our stocks in this strong condition? It is in using certain means which we have in our power, to promote the fecundity of the bees—to adapt the size of our hives to their natural increase, neither giving them too much nor too little room, and so shaping that room, that the bees operate to the best advantage, in all the ramifications of their employment, and above all admitting a plenteous infusion of fresh air, that gives life and vigor to all animated nature. These things taken in connection, give the greatest possible increase of the bees, and produce a strong and healthy progeny, active and vigorous, that live out all their days, always showing full hives with an abundance of stores, acting on the defensive with power and spirit—such are the bees that bid defiance to the moth. On the other hand, hives poorly adapted to the natural requirement of the bees, too large or too small, ventilated in the wrong place, or, perhaps, not at all, the bees weak and feeble in infancy, or in their early development, from the want of a pure atmosphere, left perhaps on short allowance of winter food, which leaves the bees in a weak condition in the spring, from which they barely recover, thus diminishing their increase in a great degree, and becoming an easy prey to the moth—such are the stocks that are subject to become undermined by this insect. There are cases, however, in which the strongest stocks are suddenly weakened by *over-swarming*, and may be destroyed by the moth. This very seldom occurs. The only stock that I ever lost was in this way. It threw off three large swarms, and the last one was larger than the stock could bear. I did not notice it till too late to save them. The only remedy in such a case, is to return the swarm to the parent stock, as soon as hived, or at evening, when the condition of the parent hive can be readily seen. It is probable that future swarms would not issue, and if one should, it is not probable that its numbers would endanger the parent stock. The mode of returning a swarm, is to place a table alongside of the bottom-board of the hive to receive the bees, and even therewith, touching the bottom-board; then place the swarm near the old hive, and raise the new hive a few inches from the table, and then bring it diagonally upon the table, with sufficient force to dislodge the bees, which will immediately take to the old hive. As soon as the bees are dislodged, draw your hive quickly to the farthermost corner of the table, and lay it down upon its side, in order to allow such bees as remain inside to escape. It is best to lower the front of the bottom-board of the old hive, before dislodging the swarm, an inch, at least, or the swarm would have difficulty in entering rapidly, and might cluster upon the outside, and in the morning take their flight.

The means to be used in order to have your bees able to defend themselves against the attacks of the moths, is nothing more nor less than the system of management, as defined in these numbers. I have kept my bees on this plan a certain number of years, during which time I have lost *one* stock by the moth, as before stated, and that was owing to excessive swarming. In the same length of time, one of my neighbors, who founded a colony of six hives, on the patent principle, with apparatus to prevent the entrance of the moth, *has lost every one of his stock!* Another neighbor,

with the same kind of hive, met with severe loss also. These, you understand, were hives patented as *proof against moths*, with small narrow tubes through which the bees enter, which, it is contended, the bees will successfully defend. Now, instead of closing up the bottoms of my hives, I leave the whole circumference exposed, as before stated, and my bees defend themselves successfully; and in order to do this, the bees must be placed in hives of a size that their natural increase will always keep full, at the season of the year that they are subject to the moth. Here we at once see the absolute necessity of studying the science of the *correct size of hives*; for there must be a *right* and a *wrong* size, and a *right shape* and a *wrong shape*. No one can suppose that a hive may either be large or small, short or long, and make no difference with his success; hence, if we must have a *certain* size, let us place that size as we find from experience that it should be. I find that hives 12 inches square in the clear, do better than larger or smaller ones, and for my reasons more fully, the reader is referred to vol. 5, pp. 343-'4 of this paper. I do not say that a variation of an inch or two either way would be a cause of unsuccess in all cases, but I am fully satisfied that more space than a *cubic foot* is superfluous, and for reasons before given, I confine it to a *square*.

But, aside from the foregoing, I think I may safely say, that without a correct knowledge of a proper *winter* management, all our efforts will avail nothing. By various experiments of heat and cold afforded to my bees, I find that there is no such thing as *freezing* bees to death; and the *colder* they are kept the better. By keeping the bees cool not half the number die during winter, and when the season of increase arrives, a few days will serve to fill the hives to overflowing, and they will generally keep so during the summer, and will be able to bid defiance to the moth.

In answer to the query of "Reviewer," how it happens if hives must be no longer than wide, that bees flourish so well in hollow trees? I admit that bees will "flourish" to a certain extent in anything—in a flour barrel, or stove pipe, if you please; but for the greatest increase and the greatest product of honey, in a certain number of years, from a single swarm, we must not go to "hollow trees." In the case of "Reviewer," perhaps the stock had remained in the tree *ten years*, without ever having issued a swarm; now, what would have been the result if that swarm had been hived by an experienced apiarian?—*not less than one thousand swarms, and honey enough to load a ship*, during the ten years.

Ravenswood, November, 1846. T. B. MINER.

[*Agriculturist*.

A METHOD FOR DESTROYING WEEVILS, MOTHS, AND OTHER INSECTS INJURIOUS TO WHEAT.

Mr. Editor:—Having read in your November number your article on insects destroying corn and wheat, and Dr. Harris's letter on the same subject, it brought to my mind an article which I had read in the *Annaels de Roville*, an excellent book from the pen of the late Mathieu de Dombasle. Although, in my opinion, it is useful to us farmers to be able to identify the enemy, still we are not much benefitted, unless furnished with a means of destroying him. I have, therefore, translated and herewith send you the above-mentioned article. If you think it may be be of any use you may insert the whole or part of it in your paper. B.

December 12th, 1846.

[*Farmer's Cabinet*.

"A multitude of means for destroying insects that devour wheat in granaries, have been suggested at different times; but it must be acknowledged that we are still in want of an easy and economical process, which should fulfil with certainty the intended object, without presenting objections of a nature precluding its constant and habitual use. I have some hope of these requisites being found united in the method I am going to describe, which has been communicated to me by an enlightened and trustworthy farmer who lives in my neighborhood, and who has been completely successful in its application.

"The idea must have occurred frequently, of applying sulphurous acid gas—the vapor which escapes from burning brimstone—to the destruction of insects injurious to grain; we know, indeed, with what promptitude this gas occasions the death of all insects exposed to it; the only difficulty might be in finding a simple and easy way of thoroughly penetrating with this gas the mass of infested grain. Should there be merely brimstone burned in the room where the grain is stored, it is probable that only the surface of the heap would be penetrated at a very inconsiderable depth; it would, besides, require the production of an enormous quantity of gas, as the whole contents of the granary must be filled with it, to obtain even such an incomplete effect. The above-mentioned farmer has contrived an ingenious way of applying the gas, which I think will answer every purpose with ease and economy. He proceeds as follows:—he makes use of two empty casks, containing each two or three *hectolitres*,* which are placed on two joists ten or twelve feet long, laid on the floor as they are usually disposed in a wine cellar. This apparatus should be placed in the granary so as to have sufficient space to circulate all round. The casks have an opening a little larger than a common bung-hole. Through this opening the cask is filled with sulphurous gas by burning a brimstone match, in the same way as coopers do for wine casks†. The wheat is then, by means of a funnel poured into the cask until completely full, and it takes the place of the gas. While the match is burning in one cask, the other is filled with grain and being rolled to the extremity of the joists, which ought to be raised one foot above the floor, when it is raked in a heap to one side.—Two men working in this way, may, in a few hours, saturate with sulphurous gas a considerable quantity of grain, for this operation is about as speedy as that of measuring wheat.

"It is easily understood that, in this process, the grains of wheat separating from each other when falling through an atmosphere of sulphurous gas, are impregnated with it all over, and that it is impossible for one single grain in the whole not to be reached by it. The air which fills the interstices between the grains is so impregnated with this gas that no insect can possibly live many seconds in it.

"This method seems to me to insure the destruction of all insects that may be contained in wheat, whether they are in the state of larva, or in the state of perfect insect; but I am not as certain that the eggs will lose the faculty of hatching. This question may demand new researches. At any rate, admitting that the eggs might withstand the action of the gas, the performance of this process is so easy and requires so little expense, that even if it had to be repeated when new insects should have hatched, the inconvenience would be trifling; and the evil would be cut in the root by destroying at once a whole generation, as no new eggs could be produced.

"To take off the smell that the grain might have contracted by this operation, it will be sufficient to stir, two or three times in the course of a few days, the sulphurated wheat, sulphurous acid being eminently volatile; and the farmer who practised it assured me that no taste or odor is preserved in the flour or bread proceeding from that wheat.

"Some precautions ought to be observed in using this process, in order that the laborers should should not be suffocated by the gas emitted in the granary. The latter should be well aired by two large openings situated at opposite sides; and the operation should be performed when the wind blows hard enough to create a strong draught. The person who pours the grain in the cask being the most liable to be incommoded by the gas which is displaced, must always put himself to the windward side of the cask.

"For the use of large establishments an apparatus might be easily contrived, by means of which the operation could be easily performed in a continuous manner, by introducing a stream of sulphurous gas in a vertical tube made of four boards, through which the grain would be sent from the upper to the lower story; but for the use of a farmer, or of any other person not having a very large quantity of grain to be operated upon, I think the use of casks will be the most commodious application of this method.

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* *A hectolitre is equal to twenty-two gallons English measure.*

† *This operation is performed by fastening the match to the end of a wire which is introduced at the bung-hole. The match must be placed as low as may be without setting fire to the cask. The floor of granaries in France are generally laid with bricks. On board floors some precaution should be used*

"I think it probable that the germinative faculty shall not be affected in the grain by the application of sulphurous gas but it may be interesting to enquire whether this application would not be more efficacious against the propogation of smut, than the other methods hitherto employed. If it be indeed true, as is generally believed, the action of lime and of sulphate of copper destroys the seminiform buds of smut, we may anticipate the same and a more energetic effect from acid sulphurous gas; and the application of this process would be certainly the easiest and the least expensive of all those that have been hitherto suggested to answer the purpose."

CORN TRADE OF THE WEST.

Indian corn is vastly the most important and valuable staple of the West. The supply has long been redundant, and can be indefinitely increased, but until lately it entered but little into general commerce, and little attention has yet been paid to the means of improving or increasing this branch of trade. The large demand that has recently sprung up for corn in Europe challenges the attention of western farmers and merchants, and requires a thorough investigation of the subject.

Corn as food for man or beast, in foreign countries, can be brought into successful competition with other grain only by its low price. But it is so bulky and light an article that the cost of transportation to a distant market must constitute a large part of its price. It is also a perishable article, and the hazard of loss in that way increases its price, while it increases the difficulty of introducing it abroad as a substitute for other grain. Diminution in the cost of transportation and getting it to market in a sound condition are the two prominent requisites to the improvement of the trade.

The saving in cost of transportation effected by shelling is so large and obvious, that a great part of the corn shipped on the western rivers is now shelled. But this practice should become universal. It will enable farmers living at quite a distance from the rivers to take their corn to market, whenever it bears a fair price. Even for consumption in the interior, shelled corn would enjoy many advantages. Besides the saving in taking it to market, its small bulk would aid its sale to the retail dealer, and save the city consumer much of the advance he has to pay to the retailer.

Several excellent corn-shellers have been invented, some of which have obtained a considerable introduction among the large farmers, but the small farmers will require a cheaper sheller. A thin cast iron slab, with from four to five holes of different sizes, is with a mallet an efficient corn-sheller, and can be procured at a cost of from one to two dollars. A single stroke of the mallet drives the cob through, clearing it of the grain. It is much better to fan the grain before it is sent to market, and this now is generally done by those having fans.

But the shelled corn cannot be sent forward in bulk, the handling and preservation of it both requiring that it be put up in packages. It is now nearly always shipped in sacks, and an impression prevails that it keeps better in gunny bags than in other sacks. Our decided impression is that this is a mere prejudice. We believe that the hempen bag will be found fully equal to the gunny of India. It will certainly command a better price at its place of destination, whether it be required as stock for paper or for woven fabrics. The cotton sack is said to be too weak, and it cannot be afforded as cheap as the gunny or hemp sack.

For stowing, handling, and, in general, for cheapness, the sack is superior to other packages, but probably for keeping the corn sweet and sound, casks may be superior. We observe that some shipments have been made from New York in boxes with a view of preserving the corn from the influence of the damp air on shipboard. Casks will allow of a free circulation of air between them, and will not transmit heat from one to another as freely as sacks. Packing in hemp bags or gunnies costs six to eight cents a bushel, and casks bought in the cities will probably cost ten or twelve cents per bushel, but the farmer could have his own casks made by his own laborers, as the tobacco, sugar, and rice planter does, at a much less cost than the market price of casks. Timber is everywhere abundant, and the hands might in the winter season get out the staves, to be made into casks on rainy days in the succeeding autumn, and in the long winter nights. The staves should be thin, and the requisite strength be given by hooping. The casks should have but little bulge, and the heads should be sustained by an outer lining hoop.

Rice is always packed in casks. It is little liable to deterioration in transporting, and therefore casks were probably preferred because of their cheapness and to prevent wastage. But if corn will keep better, as we have little doubt it will, in casks than in sacks, there is a powerful and conclusive motive for their use.

But whatever may be the form of the package, it is highly important that the corn should be fully dry before its shipment. Kiln-drying, though it certainly will impair the flavor and nutritive qualities of the grain, will of course save it from deterioration in the passage. The best preparation doubtless is to leave the corn over for some months, if not a full year, stowed away in the husk, in a dry, airy barn. It should never be shipped to a distant market until it has had time to dry pretty thoroughly. The high rail pens, with scanty roofs, in which it is often cribbed, exposes the corn to the rains. The cribs should be large and airy, with roofs projecting far over, and protected by sheds from the northern and western rains. Large barns are very appropriate.

With a view to shipment, attention should be paid to the variety of corn to be planted. It is thought that the flint corn of New England stands a sea-voyage better than the common sorts of this country; and a preference has thus far been accorded to yellow corn over white.

Attention to these suggestions we have no doubt would add millions annually to the value of the corn crop of the United States.—*Louisville Journal.*

TREATMENT OF COLTS.—Mr. Youatt, in his treatise on the horse, gives some excellent directions for the treatment of young horses during the process of their education. He maintains that colts are seldom or never vicious, by nature, to any such degree that they may not be entirely subdued and rendered tractable by kindness, and, in the subsequent parts of the process of breaking, firmness. The greater number of horses, which have become unfit for use by reason of their unmanageableness either in the harness or saddle, have been made so by injudicious treatment.

Young horses are often very perverse, but their perverseness will be generally overcome by persevering kindness. It may be necessary to use correction; but it should always be deferred till the earliest processes of education are completed, so that the animal may understand clearly what it is required to do.

The breaking of a colt should commence from the time of weaning; for if delayed any considerable time, his strength and obstinacy will be far more difficult to overcome. The usual mode of accustoming the animal to the halter, the bit, and the saddle are well enough understood.

The colt may now be taken into the street to be gradually accustomed to the objects among which his services will be required. Here, from fear or playfulness, a considerable degree of starting and shying may be exhibited. As little notice as possible should be taken of it. The same or a similar object should be passed again, but at a greater distance. If the colt still shys, let the distance be farther increased, until he takes no notice of the object. Then he may be gradually brought nearer to it, and this will be usually effected without the slightest difficulty; whereas, had there been an attempt to force him close to it in the first instance, the remembrance of the contest would have been associated with every appearance of the object, and the habit of shying would have been established.—*Prairie Farmer.*

USEFUL TO THE LADIES.—One of the most important of all household duties, is to keep the door-knobs, the lamps, the spoons, the plates, "and all that sort o' thing," in brightly polished order. If, instead of the chalk and preparations, ladies will use camphine oil and rotten stone, a far brighter, more durable and quicker polish can be obtained than in any other way. Camphine is the article used for producing the exquisite polish of the daguerreotype plates, and nothing has ever been found to equal it.

THE AMATEUR GARDENER.

O[illegible]OR PROTECTION FROM FROST.—There are many productions in the flower-garden which occupy a rather dubious position between those which are hardy or tender, and to which the best care of the gardener should be given. It is unadvisable to load pits and frames more than absolute necessity demands, on account of the great trouble entailed by the operation; besides, we should aim at training plants to bear the severity of our winters. Ascertain which roots or shrubs may be left to themselves, which will require protection in frames, and which are doubtful. It is in reference to the latter class that I propose to offer a few observations.

In mild winters the most tender roses will sustain little injury, even if fully exposed to the weather; the same may be said of wallflowers and similar plants; but a severe season will disfigure or kill some of these, and therefore precautions must be taken. But protecting must not be begun too early. I yesterday saw a garden strangely metamorphosed by conical piles of straw and short dung either tied round grieving stems of Fuchsias, &c., or laid at the roots of other things presumed to be tender. Now this was done before any frost had appeared, and with the thermometer above temperate. This is taking time by the forelock in a wrong sense, for all wrapping up is to be avoided altogether if possible, and only to be resorted to in the last extremity. If a little care is taken to have protecting materials in readiness, you may safely wait for a first frost, which rarely does much injury; and then, if the day indicates the recurrence of the dreaded visitor, proceed with your operations. Bear in mind that even this should not be done till the middle of November, for frosts before that time are generally innocuous in reference to the tribes of plants I am now speaking of.

If it is desired to protect roots, conical heaps of some dry substance may be used. I believe all dry Fuchsias will do well with this treatment. If moss is abundant, and your garden not large, some placed over these heaps and fastened by little sticks will make you more secure, and enliven the dulness of the beds. I am inclined to think that dahlias would be more safe in this way than any other. It is certain that these roots often perish from various causes when taken up and stored away; while one accidentally left in the ground often sprouts in the spring. If about six inches of some protecting material was placed over the crown, I have no doubt the roots would be found in a fine growing state for spring forcing. If you have any dahlias not taken up, try a few of them, and record the result for future practice.

Roses and other plants with woody stems which run any risk, should have the soil banked up over the roots, and a little moss spread over them as above directed. The branches may be tied up with straw. But the plan I adopt, and which I think was alluded to last season, is very preferable to any other I know of. I plant cuttings of laurels and other evergreens among the branches of the trees I wish to preserve, by which a gay and lively appearance is added to the security afforded. Of course this can only be done where evergreens are plentiful; but I would suggest that they should be grown for this purpose in every garden of any size. I have some round beds about a yard and a half in diameter, filled with tender roses, which I have just subjected to the following process: — Having a large number of layers of Laurestinus, well rooted, and not knowing exactly where to plant them to advantage, I have put them in these rose beds, in the spaces between the trees. I expect the following advantages from this plan:—First, the laurustinus and roses will mutually protect each other in severe frosts. Second, the mixture will have a fine effect when the roses are in bloom. Third, the young evergreens will be nursing up for a year or two as well there as anywhere else, and when too large for the beds may be permanently removed. I think this plan may be advantageously adopted in many cases, and young trees now located in the nursery made to increase the beauty of the garden, and afford protection to more tender objects.

Many frozen plants may be preserved from injury by preventing their being thawed by the rays of the sun. This may be effected by throwing mats over them, and not removing them till the frost is gone. Tender climbers against walls should have a mat lightly nailed over them. As a general rule, coverings must be removed as soon as possible from all growing stems, such as roses, fuchsias, &c.; if this is not done in mild weather they will push forth their buds prematurely.—H. B.—*Gardener's Chronicle.*

THE BAD ECONOMY OF BURNING GREEN FIRE-WOOD.

We have been burning for the last month, green black and white oak wood, cut from small trees. Our students find on analysis that 100 pounds of this wood contain 35½ pounds of water and less than one pound of ash. We demonstrated in an article published in the last Farmer, that 1000 degrees of heat are taken up in converting water into steam, which occupies a place 1696 times larger than that filled by the water. Although the quantity of latent heat contained in a cord of green wood is not increased by seasoning, and hence the latter can evolve no more sensible heat than the former; still in burning green wood, or wet wood, it is almost impossible to avoid the loss of one fourth of the heat generated, in combination with water, in *steam and vapor*. Most of the heat rendered latent in these gaseous bodies passes up the chimney, where they are condensed, and give out their heat to warm all out-doors.

We are anxious to give the most unscientific reader a clear idea of this subject, for it is really one of great practical importance. Look at it then in this light: you have divided your 100 pounds of green oak, beech or maple wood, into 65 pounds of dry combustible matter, and 35 pounds of cold water. Every pound of this water you evaporate in green wood and *throw the heat away* by the consumption of a part of your 65 pounds of fuel, and then take the heat evolved by the balance of your fuel to warm your room. How many ounces of perfectly dry wood are required to transform a pound of water into steam we cannot at this moment say; nor can we determine what portion of the heat taken up by steam in the combustion of green wood is again evolved by condensing in the room were the fire is made. We believe, however, that the usual loss is about equal to one third of all the heat contained in 65 pounds of kiln-dried wood; and that the gain in seasoning wood under cover is at least 25 per cent.

Winter is a good time to cut and get up a year's stock of fire-wood. Farmers at this season have less other work to perform, and wood is easier loaded and drawn when there is good sleighing, than in summer. But remember one thing: don't attempt to warm all creation by working hard to chop and haul fire wood, and at the same time leave your dwelling so open that the cold wind will rush in on all sides. By all means make your house comfortable.—Bank it up, and have all its walls tight, and good non-conductors of heat. While taking good care of those in-doors that can *talk*, and tell their wants, never forget the *dumb* brutes in your barn yard and stables. "The merciful man is merciful to his beasts."—*Genesee Farmer.*

[A good article—but where did Dr. Lee find that quotation at the end? He *thought* it was in the Bible, we presume; but it is not—at least in this form.—*Farm. & Gard.*]

SUBSOIL PLOWING.—We extract the following from the address of Mr. Newell before the Essex (Massachusetts) Agricultural Society:

The experiments of subsoiling which have come to my knowledge have not enabled me to form any definite opinion of its effects. In Mr. Colman's last Report of European Agriculture, he gives the result of certain experiments in subsoiling upon a stiff clay soil. One distinguished farmer says: "Until there is an escape for the water through the subsoil, any opening of it but provides a greater space for holding water, and will rather tend to injure than improve the soil." Other good cultivators complain of its being ineffectual "from the soil being too adhesive and heavy, and soon running together." Another says: "He expected from the complete breaking up of the subsoil that the parts would have remained distinct for years, but such was not the case. They all had ran together, and were as compact as when first moved by the plow." It seems that the English agriculturists agree that, on an adhesive soil, subsoiling is not recommended until after a thorough draining, but that all shallow soils of the lighter kinds will be improved by it.

I have used a subsoil plow for two years. I thought last year that the land subsoiled and in corn stood the drought better than that not subsoiled. On the grain crop this year I could perceive no difference. It has occurred to me that the principal benefit to be derived from subsoiling will be in keeping the surface mellow and porous, thereby enabling the subsoil to retain moisture to be imparted to the surface soil, as the exigencies of the plants may require; and if this should prove to be so, whether a more shallow surface plowing would not furnish the crop with vegetable mold equal to its wants. If this be settled, then the surface soil may be made richer. The same manure incorporated with four inches of mold, that now is within six or seven, would make a material difference with the crops. Judge Buel, on his land near Albany, found four-inch plowing deep enough to give the best crop he could obtain from those lands. I speak with no certainty on this point. I have succeeded best with deep plowing, but I know of no reason why the subsoil plow should not obviate the necessity of a deep surface-plowing, if a shoal surface of rich mold will perfect the plants better than a deeper one less rich; and provided also that the loss, if any, by evaporation is equal in both cases.

USEFUL RECIPES. — A female correspondent of the Ohio Cultivator, sends the following recipes to that paper:

Indian Batter Cakes.—A pint of rich milk, heated, a piece of butter the size of a walnut, eight large tablespoonsful of sifted Indian meal, three large tablespoonsful of sifted wheat flour, three eggs, a large teaspoonful of salaratus, one of salt.

Put the batter into the pint of milk, and warm it in a sauce pan; when scalding hot, have ready, in a pan, the Indian meal and flour, well mixed together, and pour the milk upon it. Stir it well, and thin it with a pint of cold milk; beat it until smooth and free from lumps; have ready the eggs, beaten till light, and stir them in, adding the salt and salaratus, (being previously dissolved in buttermilk.) Bake the cakes on a griddle, and butter them hot.

To keep Cider Sweet. — Rack off thirty gallons of sweet cider, put in one gill of fine salt, and one pound of chalk. This will keep it sweet for two years.

To take Mildew out of Linen. — Rub it well with soap, then scrape some fine chalk, rub that also in the linen, lay it on the grass, and as it dries, wet it a little, and the mildew will come out in thrice doing.

To Purify Honey. — Expose the honey to frost for three weeks, in some place where neither sun nor snow can reach it, and in a vessel of wood or other substance, which is not a good conductor of heat. The honey is not congealed, but becomes clear.

BITTER-ROT IN APPLES.

The blossom-buds of the peach trees were killed here on the 11th instant. They were killed here last winter, and year before our peaches were killed in May, so that this will be the third year without this fruit.

Will you or some of your correspondents give us all the information you possess with regard to the "bitter-rot" in apples. It has been rapidly on the increase here for three or four years; spreading from tree to tree and from orchard to orchard, until it is nearly all over the country. In my own orchard last season, nine-tenths of the fruit was destroyed. Whenever a tree has become affected, it has not, as yet, matured any more fruit. It commences in the latter part of July, with small black specks on the green frnit, and spreads rapidly until the whole is destroyed. The early apples, such as early harvest, early red and sweet-bough, are mostly matured before it commences. Grafts and seedlings, old trees and young, fall and winter apples, are attacked indiscriminately. P.

PREBLE COUNTY, Ohio, Jan. 21, 1837.

Of the cause and cure of this disease, we know nothing. We earnestly ask for facts. Will not our observing friends attend to this request? So many similar complaints are made, and so many are asking for information, that we regard the subject as one worthy of special investigation.

Ed. Far and Gard.

BENEFICIAL INFLUENCE OF AGRICULTURAL READING.—This year I had twenty bushels of wheat to the aker from a field of forty akers—which, for this region, is a remarkable crop —and I attribute the extra yield entirely to knowledge I have obtained by reading. When I commenced farming, twelve years ago, my wheat crop was only from six to eight bushels per aker. Last year my whole crop averaged sixteen bushels; the year before, twenty bushels. Some pieces would yield more than others, but my plan is, to thrash the whole crop and measure the product, also measure the ground, then we know all about the result.

Mr. Buel, in his life-time, furnished me information (thro' his Cultivator) in relation to making and using manures, that is worth to me at least five hundred dollars. My land is fully that amount better for the information, and I sometimes think I am better also—certain I am that I am more industrious, and take more pleasure in the pursuit of farming. Mr. Buel also taught me how to raise 100 bushels of potatoes from two bushels planting, and at some future time I shall be pleased to communicate this information for the benefit of all who desire it.

Nov. 10. Since writing the foregoing, I have travelled three hundred miles, and have seen so much better wheat crops, and so many better farms, that I am almost ashamed to write you that I am a farmer. However, an honest confession is good for the soul; and I will not deny my profession. My opinion is that we all need a much greater amount of information in relation to our business; and hence every farmer should take and read agricultural papers.

Respectfully, &c.,

MILTON J. ROSS.

ALLEN Co., O., Nov., 1846.—*Ohio Cultivator.*

LIME AROUND APPLE TREES. — The editor of the Maine Cultivator, after recommending lime to the amount of a peck or half a bushel, applied annually around peach trees, says:

"An old farmer of much discrimination observed to us recently that he had made it a regular practice, for several years, to sow caustic lime around his apple trees in the spring. He had noticed that a tree standing in the immediate vicinity of his dwelling, had all at once put forth with renewed energy, and he was at a loss, for some time, to define the cause. On inquiry, he found that a quantity of lime, which had accidentally been spilled, and rendered worthless by becoming mixed with the refuse on the stable floor, had been thrown at the foot of the tree, and to this, as the principal cause, he immediately assigned the re-vivacence and renewed fructification of the tree. Taking the hint from this accident, he purchased twelve casks of lime, and applied half a bushel to each tree, and found that it produced immediate beneficial effects. Not the health of the trees only, but the quality of the fruit was also greatly improved. We would advise our readers to make trial of this experiment, and see whether it is deserving of the high recommendations it receives."

PIGSTIES. — Various forms of these are recommended in our agricultural exchange papers. Flat rocks are usually named as the best floors for the manure of hogs, to prevent their rooting up the bottom of the pen. But we have always found such bottoms quite too hard to shovel on; you cannot contrive a worse floor than a stone one if you intend to use a shovel in clearing out. And pens in summer should be often cleared, and their contents thrown into a heap — beside the pen if you please — otherwise the muck is too much exposed to the air.

Plank floors will last a long time if they are properly laid; but they should never be laid on sleepers. When they are so laid they are exposed to alternate wetting and drying, the worst state that can be contrived to preserve timber.

Lay plank, or inch boards, on to a flat surface of loam or clay, and they will last a long time in case they are kept covered with earth or other matter that is thrown in to increase the manure. Chestnut or white-oak will last twenty years, and will make an excellent bottom for shovelling, and such planks will be more effectual to prevent the loss of the liquid than any stone platforms that can be laid.

The plank floor may be kept in place by driving pins through the planks into the earth, or by laying strips of plank or joists across the ends; or a board may be nailed on to the ends. Such a floor may be laid in any place that is suitable for a hog-pen. If the bottom is gravelly or stony, a layer of loam or of clay may be spread before the planks are laid.

The room where the hogs sleep is another affair. This should be higher and dryer than the part where the manure is dropped; and in this sleeping room the trough for feeding must be placed, because hogs seldom leave any manure where they lie down to rest. If you would have the trough always clean enough to eat from, keep it in the sleeping apartment. *Mass. Plowman.*

AGRICULTURAL STATISTICS OF NEW YORK.—The following statistics of agriculture are furnished by the Marshals employed to take the census of 1845:

Akers of improved land in the State,	11,767,276
Akers of barley under cultivation,	192,503
Bushels of Barley raised,	3,108,704
Akers of peas under cultivation,	117,379
Bushels of peas raised,	1,761,5g3
Akers of rye sown,	317,099
Bushels of rye harvested,	2,966,322
Akers of oats sown,	1,026,915
Bushels of oats harvested,	26,323,051
Akers of beans under cultivation,	16,231
Bushels of beans raised,	162,187
Akers of buckwheat under cultivation,	255,295
Bushels of buckwheat raised,	3,634,679
Akers of turnips under cultivation,	15,322
Bushels of turnips raised,	1,350.332
Akers of potatoes under cultivation,	255,762
Bushels of potatoes raised,	23,653,418
Akers of flax under cultivation,	46,089
Pounds of flax raised,	2,897,062
Akers of wheat sown,	1,013,655
Akers of wheat harvested,	958,233
Bushels of wheat raised,	13,391,770
Akers of corn sown,	595,133
Bushels of corn harvested,	14,722,114

[*American Agriculturist.*

SIR WALTER SCOTT ON THE SABBATH.—It may not be without its use the submitting to our readers the following opinion on the Sabbath question, of one whom none could certainly accuse of bigotry, viz:, Sir Walter Scott. It is taken from the *Quarterly Review* of 1828:—"If we believe in the Divine origin of the commandment, the Sabbath is instituted for the express purposes of religion. The time set apart is the Sabbath of the Lord—a day on which we are not to work our own works or think our own thoughts. The precept is positive, and the purpose clear. For our eternal benefit a certain space of every week is appointed, which sacred from all other avocations save those imposed by necessity and mercy, is to be employed in religious duties. The Roman Catholic church, which lays so much force on observances merely ritual may consistently suppose that the time claimed is more than sufficient for the occasion, and dismiss the peasants, when mass is over, to any game or gambol which fancy may dictate, leaving it with the priests to do on behalf of the congregation what farther is necessary for the working out of their salvation. But this is not Protestant doctrine, though it may be imitated by Protestant churches. The religious part of a Sunday's exercise is not to be considered as a bitter medicine, the taste of which is as soon as possible to be removed by a bit of sugar. On the contrary, our demeanor through the rest of the day ought to be not sullen, certainly, but serious, tending to instruction. Give to the world one-half of the Sunday, and you will find that religion has no strong hold of the other. Pass the morning at church and the evening according to your taste or rank, in the cricket-field or at the opera, and you will soon find thoughts of the evening hazards and bets intrude themselves on the sermon, and that recollections of the popular melodies interfere with the psalms. Religion is thus treated like Lear, to whom his ungrateful daughters first denied on-half of his stipulated attendance, and then made it a question whether they should grant him any share of what remained."—*Glasgow Courier.*

VALUABLE RECIPES.

BOSTON BAKED BEANS.—The Massachusetts Plowman gives the following recipe for cooking this far-famed Yankee dish. We can vouch for its excellence. Take two quarts of middling sized white beans, three pounds of salt pork, and one spoonful of molases. Pick the beans over carefully, wash and turn about a gallon of soft water to them in a pot; let them soak in it lukewarm over night; set them in the morning where they will boil till the skin is very tender and about to break, adding a teas-poonful of salaratus. Take them up dry, put them in your dish, stir in the molases, gash the pork, and put it down in the dish, so as to have the beans cover all but the upper surface; turn in cold water till the top is just covered; bake and let the beans remain in the oven all night.

Beans are good prepared as for baking, made a little thinner, and then boiled several hours with the pork.

THE PUBLIC DEBTS OF EUROPE COMPARED WITH THAT OF NEW YORK.

The following synopsis of the national indebtedness of some of the countries of Europe, together with that of our own State. By comparison we find the Prussian government quite ahead of us as a State, in regard to our financial operations. We invite attention to the facts.

ENGLAND.—Debt, $4,000,000,000; revenue, $2,000,000,000; population, 28,000,000. Making a debt about thirteen times greater than her revenue, and an indebtedness equal to about $143 to every man, woman and child of her population.

FRANCE.—Debt, $780,000,000; revenue, $192,000,000; population, 35,000,000. Making a debt four times greater than her revenue, and equal to $22 for each individual of her population.

RUSSIA.—Debt, $300,000,000; revenue, 86,000,000; population, 50,000,000. Debt three times over her revenue, and $9 to every soul.

AUSTRIA.—Debt, $300,000,000; revenue, 100,000,000; population, 37,000,000. Debt three times over her revenue, and $9 to every soul.

PRUSSIA.—Debt, $100,000,000; revenue, $40,000,000; population, 15,000,000. Debt twice and a half over her revenue, and $7 to each soul.

NEW YORK.—Debt, $24,000,000; revenue, $3,000,000; population, 3,000,000. Debt eight times over her revenue, and $8 to every soul.—*Farmer and Mechanic.*

HINTS FOR CHILDREN.—Do not deface walls, doors, or door-steps, with writing on them.

It is ill-bred to walk heavily, to slam doors, to make any unnecessary bustle or fuss.

It is ill-bred to shuffle with your feet, to drum with your fingers, to put them in your ears or mouth, to bite your nails, or to have any trick with your hands.

It is ill-bred to use slang words or phrases.

Indecent and profane expressions are something far worse than ill-bred; they indicate that you do not reverence God, nor respect man. But they are also vulgar. Profane and indecent words degrade you. If you respect yourselves, you will not use such language, nor will you listen to it. *Miss. Sedgewick.*

THE TROUT PEAR.

Synonymes.—Forellenbirne, [illegible]te.

"Long as I have collected fruits," say[illegible] Adrian Diel, "and searched the gardens in the neighbo[illegible]f the Rhine, furnished with French sorts, I have foun[illegible]ruit like the Trout Pear. We may, therefore, proud[illegible] this a national variety, which most probably origi[illegible] Northern Saxony. It is a valuable addition to our [illegible] November and December pears, which may comp[illegible] the best French dessert kinds, ripening at the san[illegible]d, and far surpassing them in the length of its keep[illegible] perfection, and in its beauty." He adds, "could we[illegible]natic Ger-

mans make as much fuss about novelties as the volatile French do, the Trout Pear would have acquired, ere now, the highest celebrity."

It has obtained its name from its beautiful trout-like speckling. The spots are numerous, circular, bright gray, margined with crimson. The flesh is white, exceedingly smooth and fine-grained, buttery and melting, with a pleasant vinous flavor. In perfection in November, and will sometimes keep till January. The tree is of vigorous upright growth, bearing early and abundantly. The shoots are glossy, of a fine violaceous dark red, sprinkled with few whitish grey spots, and towards the extremeties very slightly woolly; leaves middle-sized, ovate, somewhat cordate at the base, acuminate, the apex slightly deflexed, their margins finely denticulated; petioles, one to two inches in length; flowers middle-sized, opening early; petals roundish.

It is adapted for a wall or espalier, and, probably, for a standard; at all events the singularly beautiful appearance of the fruit, the smoothness and delicacy of its flesh, and the productiveness of the tree, will entitle the latter to a place in every good collection.—R. T.—*Gard. Chron.*

White and Brown Bread.—Several years ago, we threw out the surmise that the separation of the white from the brown parts of wheat grain was likely to be baneful to health. We proceeded upon theoretical grounds, believing that Providence must have contemplated our using the entire grain, and not a portion only; selected by means of a nicely arranged machinery. It struck us forcibly that to go on for a long course of years, thus using a kind of food different from what nature designed, could not fail to be attended with bad consequences. We have since learned that our views have some recognized support in science. The following paragraph from a recent pamphlet will at once serve to keep the subject alive in the minds of our readers, and explain the actual grounds on which the separation of flour is detrimental. "The general belief," says the writer, "is that bread made with the finest flour is the best, and that whiteness is the proof of its quality; but both these opinions are popular errors. The whiteness may be and generally is communicated by alum, to the injury of the consumer, and it is known by men of science that the bread of unrefined flour will sustain life, while that made with the refined will not. Keep a man on brown bread and water, and he will live and enjoy good health; give him white bread and water only, and he will sicken and die. The meal of which the first is made contains all the ingredients necessary to the composition of nourishment to the various structures composing our bodies. Some of these ingredients are removed by the miller in his efforts to please the public; so that fine flour, instead of being better than meal, is the least nourishing; and to make the case worse, it is also the most difficult of digestion. The loss is, therefore, in all respects a waste; and it seems debirable that the admirers of white bread (but especially the poor) should be acquainted with these truths, and brought to enquire whether they do not purchase at too dear a rate the privilege of indulging in the use of it. The unwise preference given so universally to white bread leads to the pernicious practice of mixing alum with the flour, and this again to all sorts of adulterations and impositions; for it enabled bakers, who were so disposed, by adding more and more alum, to make bread made from the flour of an inferior grain look like the best or more costly, and to dispose of it accordingly; at once defrauding the purchaser, and tampering with his health. Among the matters removed by the miller are the large saline substances, which are indispensable to the growth of the bones and teeth, and are required, although in a less degree, for daily repair. Brown bread should therefore be given to nurses and to the young or the growing, and should be preferred by all, of whatever age, whose bones show a tendency to bend or who have weak teeth. It is believed that brown bread will generally be found the best by all persons having sluggish bowels and stomachs, equal to the digestion of the bran. But [illegible] will disagree; for it is too exciting to irritable [illegible] with difficulty in some stomachs. When this happens, the bran should be removed wholly or in part; and by such means, the bread may be adapted, with the greatest ease, to all habits and all constitutions."

Mr. Smith, in his late remarkable work on fruits and farinacea as the food of man, gives some illustrations of this doctrine. "Bule," he say, is nearly as necessary to the articles of diet as the nutrient principle. They should be so managed that one should be in proportion to the other. Too highly nutritive is probably as fatal to the prolongation of life and health, as that which contains an insufficient quantity of nourishment." It is a matter of common remark among old whalemen, that, during long voyages, the coarser their bread, the better their health. "I have followed the seas for thirtyfive years," said an intelligent sea-captain to Mr. Graham, "and I have been in almost every part of the globe; and I have always found that the coarsest pilot-bread, which contains a considerable portion of bran, is decidedly the best for my men." "I am convinced, from by own experience," says another captain, "that bread made of the unbolted wheat meal is far more wholesome than that made from the best superfine flour, the latter always tending to produce constipation. Capt. Dexter, of the ship Isis, belonging to Providence, arrived from China in December, 1804. He had been about one hundred and ninety days on the passage. The sea-bread, which constituted the principal article of food for his men, was made of the best superfine flour. He had not been long at sea before his men began to complain of languor, loss of appetite, and debility. These difficulties continued to increase the whole voyage; and several of the hands died on the passage of debility and inanition. The ship was obliged to come to anchor thirty miles below Providence; and such was the debility of the men on board, that they were not able to get the ship under weigh again, and the owners were under the necessity of sending men down from Providence. When she arrived the owners asked Capt. Dexter what was the cause of the sickness of his men. He replied: "The bread was too good."

Chambers' Edinburg Journal.

How to Prevent Disease in Sheep.—*Mr. Batcham*—One of your correspondents proposes giving salt pork to sheep to cure the rot, and another proposes putting tar on their noses once a month, &c. &c. Now to my mind these prescriptions are about as rational as to set a fleece of wool before a hungry man who is perishing from famine. Sheep raising has been my principal business for the last sixteen years, and there never has been any disease among them within my knowledge. My motto is, "an ounce of prevention is better than a pound of cure," and my remedy against all diseases of sheep is, to give them plenty of good pasture, with water, shade and salt, in summer; and in winter the addition of hay, grain and shelter. W. L. Thorn.

Mahoning Co., O., Jan. 1847.

(☞ This date was printed *Washington* county, by mistake in our last.—ed.)—*Ohio Cult.*

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